

3. A system as claimed in claim 2 further comprising a capacity manager adapted to:
- receive a request for connection capacity between specified network elements;
 - determine if there is available capacity to satisfy the request on an existing communications channel between the specified network elements;
 - if there is available capacity on an existing communications channel, allocate the capacity to the service request, and return a message to the service manager identifying the existing communications channel; and
 - if a communications channel with available capacity does not exist to send a message to the WRM requesting that a channel be set up to satisfy the service request.
4. A system as claimed in claim 1 wherein the channel selection algorithm comprises:
- a route selector adapted to select a route between A and B from a set of routes in accordance with at least one selection criterion; and
 - a wavelength selector adapted to select the at least one wavelength for the communications channel on the selected route.
5. A system as claimed in claim 4 wherein the route selector further comprises a route evaluation algorithm adapted to:

determine a value associated with at least one of a number of optical links in the route; a sum of lengths of the optical links in the route; and, a sum of costs associated with each optical link in the route, for each route evaluated; and

use the determined value of each route to select a route with a preferred value.

6. A system as claimed in claim 4 wherein the wavelength selector is adapted to select the at least one wavelength subject to the following constraints:

each of the at least one wavelengths is not indicated to be currently used on any section in the route; and

if regeneration is required, a regenerator is available to regenerate the at least one wavelength in response to regeneration opportunity information.

7. A system as claimed in claim 6 wherein the wavelength selector is further adapted to access a data store in order to retrieve at least one of wavelength utilization information, and regeneration opportunity information.

8. A system as claimed in claim 7 wherein the wavelength selector is further adapted to obtain a distance traversed between A and B over the selected route, and to compare the distance with a predefined regeneration threshold in order to estimate a number (R) of regenerations required for a channel on the